



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, DC 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/842,827	04/17/97	LEUNG	D 077319/0125

HM11/0714

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
PO BOX 25696
WASHINGTON DC 20007-8696

EXAMINER
PROUTY, R

ART UNIT	PAPER NUMBER
1652	

DATE MAILED: 07/14/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/842,827	04/17/97	LEUNG	D 077319/0125

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
PO BOX 25696
WASHINGTON DC 20007-8696

HM11/0526

EXAMINER	
PROUTY, R	
ART UNIT	PAPER NUMBER
1652	8

DATE MAILED:

05/26/98

attached
Please find ~~below~~ a communication from the EXAMINER in charge of this application.

Commissioner of Patents

Office Action Summary

Application No.
08/842,827

Applicant(s)
Leung et al.

Examiner
Rebecca Prouty

Group Art Unit
1652



☒ Responsive to communication(s) filed on Mar 3, 1998

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Applicant should note that this action additionally includes a 1 MONTH NON-EXTENDABLE time period in which to copy a claim for Disposition of Claims Purpose of Interference.

☒ Claim(s) 1-13 is/are pending in the application.

Of the above, claim(s) 1, 3, and 4 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 2, 5, 6, and 10-13 is/are rejected.

☒ Claim(s) 7-9 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1652

Claims 1-12 and newly presented claim 13 are still at issue and are present for examination.

Applicants' arguments filed on 3-3-98, paper No. 7, have been fully considered and are deemed to be persuasive to overcome some of the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

Applicant's election with traverse of Group I, Claims 2 and 5-12 (and new claim 13) in Paper No. 7 is acknowledged. The traversal is on the ground(s) that there would not be an additional burden of search for the co-examination of both groups. This is not found persuasive because the examination of the DNA claims of Group II would require the search and consideration of subclasses unnecessary for the search and consideration of the proteins of Group I. For example search of Group II would require the search of subclasses 536/23.2, 435/320.1 and 435/252.3 which are unnecessary for the search of Group I.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1, 3 and 4 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention, the requirement having been traversed in Paper No. 7.

Art Unit: 1652

This application contains claims 1, 3, and 4 drawn to an invention nonelected with traverse in Paper No. 7. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 5, 6, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kai et al. in view of any one of GENBANK entries AA040858, W04968 or H68363. The rejection is explained in the previous Office Action.

Applicants argue that since the cited ESTs describe no putative start codon, stop codon, or function for the disclosed

Art Unit: 1652

sequences, the disclosure of these ESTs would not have led the skilled artisan to believe that the cited fragments encoded any particular protein. This is not persuasive because one of ordinary skill in the art would reasonably expect that each EST corresponds to the production of some protein as ESTs are fragments of cDNAs which are produced by reverse transcription from mRNAs of a particular cell type. Only expressed proteins have corresponding mRNAs in a cell and thus each EST corresponds to an expressed protein. While the ESTs encode only a portion of the cDNA encoding a particular protein they clearly provide a suggestion that the cell from which the EST was reverse transcribed expressed a corresponding protein. The high homology of the cited ESTs to the mouse PAP gene disclosed by Kai et al. clearly suggests that the protein to which each of these ESTs correspond is the human homolog of the protein of Kai et al.

Applicants additionally argue that Claims 2 and 6 are further non-obvious because the cited references do not suggest the particularly cited amino acid sequence of these claims. This is not persuasive because the amino acid sequence recited is an inherent property of the human homolog of the protein of Kai et al. Applicants rely on *In re Deuel* in support of this argument. However, it is noted that *Deuel* differs from the instant

Art Unit: 1652

situation in that the cited prior art in *Deuel* fails to teach any structurally similar compound while in the instant case Kai et al. clearly teach a structurally and functionally similar protein which in combination with the human ESTs clearly suggests its human homolog.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kai et al. in view of any one of GENBANK entries AA040858, W04968 or H68363 as applied to claims 2, 5, 6, and 10-12 above, and further in view of Brindley et al. (Reference A1)

Kai et al. teach the isolation of porcine PAP and the isolation of and expression of the mouse PAP gene.

Each of GENBANK entries W04968, H68363, and AA040858 disclose a fragment of human cDNA which comprises a sequence highly homologous to a portion of the sequence of the mouse PAP gene disclosed by Kai et al. As such it would have been obvious to one of ordinary skill in the art that there is a human homolog of the PAP of Kai et al. which is highly homologous to the mouse and porcine proteins.

Brindley et al. teach that mammalian type 2 PAPs dephosphorylate phosphatidic acid, lysophosphatidic acid, sphingosine-1-phosphate and ceramide-1-phosphate to generate products important in signal transduction pathways.

Art Unit: 1652

Therefore, as Kai et al. and Brindley teach that type 2 PAPs such as that encoded by the disclosed gene play a role in the regulation of signal transduction by phospholipase D and other proteins, it would have been obvious to one of ordinary skill in the art to isolate the human homolog of the porcine and mouse PAPs disclosed and to use this enzyme for the dephosphorylation of lysophosphatidic acid, sphingosine-1-phosphate and ceramide-1-phosphate and the regulation of signal transduction.

The rejection of Claims 5, 8, and 10-12 under 35 U.S.C. 103(a) over GENBANK entry U79294 in view of Kai et al. is withdrawn in view of applicants arguments that one of ordinary skill in the art would not have had sufficient expectation that the gene of GENBANK entry U79294 encoded an active PAP enzyme in view of the reported incorrect carboxy terminus of the encoded amino acid sequence and the only moderate level of homology of the reported amino acid and nucleic acid sequences to the prior art sequences of Kai et al. As such it would have only been obvious-to-try to use the protein encoded by the gene of GENBANK entry U79294 in methods of dephosphorylating phosphatidic acid, lysophosphatidic acid, sphingosine-1-phosphate or ceramide-1-phosphate.

The following allowable claim is suggested for the purpose of an interference:

Art Unit: 1652

A isolated and purified polynucleotide encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

The suggested claim must be copied exactly, although other claims may be proposed under 37 CFR 1.605(a).

Applicant should make the suggested claim within ONE MONTH or THIRTY DAYS from the mailing date of this letter, whichever is longer. Failure to do so will be considered a disclaimer of the subject matter of this claim under the provisions of 37 CFR 1.605(a). THE PROVISIONS OF 37 CFR 1.136(a) DO NOT APPLY TO THIS TIME PERIOD.

Claims 1, 3, and 4 are considered unpatentable over this suggested claim.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened

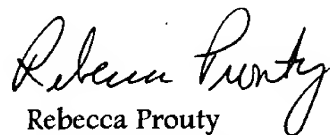
Art Unit: 1652

statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca Prouty, Ph.D. whose telephone number is (703) 308-4000. The examiner can normally be reached on Monday-Friday from 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Wax, can be reached at (703) 308-4216. The fax phone number for this Group is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.


Rebecca Prouty
Primary Examiner
Art Unit 1652